Migrating to ATM

Technical Data

Class Overview

Corporations and agencies of many sizes are moving from narrowband to broadband networks and from LAN access strategies to backbone strategies. This transition is not easy. A clean transition requires a clear strategy and understanding of the potential benefits of migration as well as the obstacles. It also requires a through understanding of the network technologies involved on the part of all concerned. This includes both the legacy networks, the new networks and the mapping of one to the other.

Course Features

What You will Learn

- Fundamentals of ATM
- Key objectives in migration to ATM and how to achieve them through understanding, careful planning, network design and implementation
- Fundamental relationships between current LAN-based strategies and the desired ATM network based on a set of protocol maps
- A set of migration strategies
- How two organizations migrated to ATM
- Costs and benefits of the new network technologies as well as prescriptions for a successful network design

Specifications

Course Length
2 days

Audience
Network designers, network operators, engineering and technical staff, information system managers and consultants. It will benefit those who purchase and manage corporate and proprietary networks as well as those who provide network services.

Prerequisites
Fundamentals of ATM (H7211B opt. 100) or equivalent experience.

Delivery Method
Dedicated

Format
Course content is 80% lecture and 20% hands-on.

Ordering Information

To order Migrating to ATM (H7211B opt. 200) course in the U.S. call 1-800-HPCLASS (800-472-5277).

HP's Customer Registration Center can provide you with price, scheduling and enrollment information about dedicated delivery or customizing a course for your specific needs.

Outside the U.S., contact your nearest local HP sales office.

HP Education Services: Your Key to Higher Productivity

Classroom Training Benefits

Experienced HP Instructors
Learn from an experienced HP instructor who is a specialist in using and applying test instrumentation to optimize and troubleshoot ATM networks.

Available at HP Classroom or Your Site
Classes can be arranged at one of HP's many learning facilities located across the country. Or , save travel expenses and time by organizing a dedicated class at your location.

Extensive Hands-on Practice
HP classroom training is characterized by extensive hands-on experience and interactive class discussion. HP classroom training pays off immediately because it is geared to real-world solutions.

Comprehensive Student Materials
Copies of course materials are provided for future reference on the job.

Course Number: H7211B opt. 200 (Dedicated)

Migrating to ATM (H7211B opt. 200)

Course Agenda

BISDN Reference Model
- Physical Layer
- ATM Layer
- AAL Layer 1, 3/4, 5
- ATM Cell

Cell Structure & Format
- Header
- VPI/VCI
- GFC
- PTI
- HEC
- Payload

ATM Characteristics
- Connection - Oriented switching
- Packet Loss Rate Compensation
- Service Characteristics

ATM Testing
- Delay Characteristics
- Setting up a Signaling Connection (SVC)
- Measuring Delay Characteristics
- Triggering on ATM events
- Packet Loss
- Cell-Based Alarms

ATM Layer
- ATM Services
- Service Classes
- CBR
- re - VBR
- nrt - VBR
- ABR
- UBR

Quality of Service
- Negotiated Parameters
- Non - Negotiated Parameters

Traffic Contract
- Connection Traffic Description
- Cell Conformance & Connection Compliance
- Functions & Procedures for Traffic Management

ATM Adaptation Layer
- AAL Elements , Functions & Mapping

ATM Signaling
- Q.2931 Connections
- 3.0 , 3.1, & 4.0 Signaling Specifications
- SSCOP Handshaking
- Virtual Path Connection Identifier (VPCI)

AAL5 Subnetwork Access Protocol (SNAP) Encapsulation

NNI Protocol Basics

B - ICI Protocol Basics

(P)NNI Protocol Basics

ATM Interworking

Review of ISDN and Frame Relay
- Components
- Technology
- Implementation

Why Migrate
- Common Objectives
  - – increasing throughput and access
  - – reducing cost and complexity
  - – audience specific objectives (exercise)

Barriers to Migration
- The lack of understanding of the differences between current networks and ATM
- The sheer complexity of the problem
- Difficulty in agreeing on a migration strategy
- Difficulties in provisioning

Migration Strategies
- Legacy routing
- LAN emulation/Virtual LANs (VLANs)
- Multiprotocol over ATM
- Frame Relay and SMDS Interworking
- Pure ATM, end-to-end

Case Study #1 Metropolitan Research and Academic Network (MRAN)-Chicago
- Connection-Oriented versus
- Connection-Less Networks

Mapping and Understanding Protocols
- OSI layers 1-7: ISDN/x.25/FR/ATM
- OSI layers 1-7: LAN/ATM

Reducing Network Complexity Through Design
- Number of separate networks
- Number of network protocols

Case Study #2 Bear-Stearns
Corporate Network

Costs and Benefits of Migration
- Installation and monthly charges
- Management and administrative overhead

Managing ATM in a Multi-Vendor Environment

Traffic Management Issues

Integrating Voice

Conclusion: Analyzing your Migration Strategy - Key Questions to Ask

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